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IN THE CLAIMS:

1   1.   (Original): A method for inspecting a semiconductor wafer comprising:
2   receiving defect information representative of plurality of defects on a
3   semiconductor wafer;
4   taking a statistically-based sampling of said plurality of defects to produce a
5   plurality of N sampled defects, N being a sample number; and
6   performing an inspection of each of said N sampled defects to produce summary
7   information representative of results of said inspection of each of said N sampled defects.

1   2.   (Original): The method of claim 1 further including receiving user-
2   provided information comprising one or more statistical criteria, wherein said sample number N
3   is a computed number resulting from one or more computations made based on said statistical
4   criteria.

1   3.   (Original): The method of claim 1 further including receiving user-
2   provided information comprising one or more statistical criteria, wherein said sample number is
3   produced by a table look-up of one or more data tables.

1   4.   (Original): The method of claim 1 further including receiving user-
2   provided information comprising one or more statistical criteria, wherein said sample number is
3   produced by a combination of one or more computations made based on said statistical criteria
4   and a table look-up of one or more data tables.

1   5.   (Original): The method of claim 1 wherein said one or more statistical
2   criteria comprise a reliability value and an allowable error value and said step of taking a
3   statistically-based sampling includes randomly sampling N defects from said plurality of defects.

1   6.   (Original): The method of claim 1 wherein said one or more statistical

2   criteria comprise a reliability value and a dominant defect percentage value and said step of

3   taking a statistically-based sampling includes randomly sampling N defects from said plurality of

4   defects.

1   7.   (Original): The method of claim 1 wherein said defect information is

2   further representative of one or more clusters of said defects, said user-provided information

3   further being representative of one of said one or more clusters, said step of sampling taking a

4   statistically-based being performed on said one of said one or more clusters.

1   8.   (Original): The method of claim 7 wherein said one or more clusters of

2   said defects are classified based on density of defects.

1   9.   (Original): The method of claim 1 wherein said step of receiving defect

2   information includes performing a first inspection of said semiconductor wafer, said first

3   inspection identifying the presence of a defect.

1   10.   (Original): The method of claim 1 wherein said summary information

2   includes first information indicative of clusters of said defects on said semiconductor wafer,

3   second information indicative of a dominant defect in each of said clusters, and third information

4   indicative of a distribution of different kinds of defects in each of said clusters, said method

5   further including presenting said first information, one or more portions of said second

6   information, and one or more portions of said third information.

1   11.   (Withdrawn): A method for inspecting semiconductor wafers comprising:

2   receiving defect data representative of defects on a semiconductor wafer;

3   receiving one or more user-provided statistical criteria;

4   producing one or more sampling criteria based on said statistical criteria;

5   taking a sample of said defect data based on said sampling criteria to produce a

6   set of sampled data; and

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7   inspecting each defect on said semiconductor wafer contained in said set of

8   sampled data to produce review data.

1   12.   (Withdrawn): The method of claim 11 wherein said step of receiving one

2   or more user-provided statistical criteria includes presenting one or more data entry areas to a

3   user and receiving information from said user indicative of said one or more statistical criteria.

1   13.   (Withdrawn): The method of claim 12 wherein said step of presenting

2   includes producing a graphical user interface on a display, said graphical user interface

3   comprising one or more graphical elements effective for prompting a user to provide said one or

4   more statistical criteria.

1   14.   (Withdrawn): The method of claim 11 wherein said one or more statistical

2   criteria include a reliability value, said step of receiving one or more user-provided statistical

3   criteria including presenting a data entry area to a user and receiving data from said user

4   indicative of said reliability value.

1   15.   (Withdrawn): The method of claim 11 wherein said defect data is further

2   representative of one or more clusters of said defects, said method further including receiving

3   user-provided information representative of one of said one or more clusters, said step of taking a

4   sample being performed on said one of said one or more clusters.

1   16.   (Withdrawn): The method of claim 11 wherein said review data includes

2   first information representative of clusters of defects on an inspected semiconductor wafer,

3   second information indicative of a major defect mode in each of said clusters, and third

4   information representative of a distribution of each of one or more kinds of defect in each of said

5   clusters, said method further including presenting said first information and said second

6   information, and receiving user-provided information indicative of one of said clusters, and in

7   response thereto presenting a portion of said third information relating to a distribution of each

8   kind of defect in said one of said clusters.

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1   17.   (Withdrawn): The method of claim 16 wherein said presenting said first

2   and second information include presenting images of one or more portions of said inspected

3   semiconductor wafer.

1   18.   (Withdrawn): The method of claim 16 further including producing review

2   data for a plurality of inspected semiconductor wafer, receiving user-provided information

3   representative of one of said inspected semiconductor wafers, and in response thereto presenting

4   first information of said one of said inspected semiconductor wafers.

1   19.   (Withdrawn): The method of claim 16 wherein said steps of presenting

2   include producing graphical elements on a display.

20 - 33.   (Canceled)